

What is claimed is:

1. An illuminated switch construction comprising:
  - a substrate having at least one guide hole formed
  - 5 therein;
  - a switch unit provided on said substrate, said switch unit having a driven part driven for reciprocating motion;
  - a light-emitting device provided on said substrate
  - 10 at a location adjacent to said switch unit; and
  - a pushbutton unit that drives said switch unit, said pushbutton unit having an opposed part disposed in opposed relation to said light-emitting device, a depressing part disposed in association with said opposed
  - 15 part, for depressing operation, said depressing part allowing light from said light-emitting device to pass therethrough, a coupling part coupled to said driven part of said switch unit to interlock said driven part and said pushbutton unit for reciprocating motion, and at
  - 20 least one guide pin fitted through a corresponding one of said at least one guide hole of said substrate to cooperate with said corresponding guide hole to perform a guiding function of guiding the reciprocating motion of said pushbutton unit.
- 25 2. An illuminated switch construction as claimed in claim 1, wherein:
  - said switch unit has a vertical surface
  - substantially perpendicular to said substrate; and
  - said pushbutton unit has a sliding contact part that
  - 30 is disposed for sliding contact with said vertical surface of said switch unit in accordance with the reciprocating motion of said pushbutton unit; and
  - said vertical surface of said switch unit and said sliding contact part of said pushbutton unit cooperate
  - 35 with each other to perform the guiding function together

with the guide hole and the guide pin, for guiding the reciprocating motion of said pushbutton unit.

3. A pushbutton unit for an illuminated switch fixed on a substrate having at least one guide hole formed therein, said pushbutton unit being operated for driving a switch unit having a driven part that is driven for reciprocating motion, comprising:

an opposed part disposed in opposed relation to a light-emitting device provided on the substrate at a location adjacent to the switch unit;

a depressing part disposed in association with said opposed part, for depressing operation, said depressing part allowing light from the light-emitting device to pass therethrough;

a coupling part coupled to the driven part of the switch unit to interlock the driven part and the pushbutton unit for reciprocating motion; and

at least one guide pin fitted through a corresponding one of the at least one guide hole of the substrate to cooperate with the corresponding guide hole to perform a guiding function of guiding the reciprocating motion of the pushbutton unit.

4. A pushbutton unit for an illuminated switch as claimed in claim 3, further comprising a sliding contact part disposed for sliding in contact with a vertical surface of the switch unit in accordance with the reciprocating motion of the pushbutton unit, and wherein said sliding contact part cooperates with the vertical surface to perform the guiding function together with the guide hole and the guide pin, for guiding the reciprocating motion of the pushbutton unit.

5. An illuminated switch construction comprising:  
a substrate having at least one guide part;  
a switch unit provided on said substrate, said switch unit having a driven part that is driven for

reciprocating motion;

a light-emitting device provided on said substrate at a location adjacent to said switch unit; and

a pushbutton unit that drives said switch unit, said  
5 pushbutton unit having an opposed part disposed in  
opposed relation to said light-emitting device, a  
depressing part disposed in association with said opposed  
part, for depressing operation, said depressing part  
allowing light from said light-emitting device to pass  
10 therethrough, a coupling part coupled to said driven part  
of said switch unit to interlock said driven part and  
said pushbutton unit for reciprocating motion, and at  
least one guide-engaging part engaged with a  
corresponding one of said at least one guide part of said  
15 substrate to cooperate with said corresponding guide part  
to perform a guiding function of guiding the  
reciprocating motion of said pushbutton unit.

6. An illuminated switch construction, as claimed  
in claim 5, further comprising at least one guide pin  
20 provided on said guide-engaging part, and

wherein said guide part has at least one through  
hole formed therein and extending in a longitudinal  
direction of said at least one guide pin of said guide-  
engaging part, said guide pin being fitted through said  
25 at least one through hole, said guide part being formed  
as a separate member from said substrate and fixed to  
said substrate.

7. An illuminated switch construction comprising:

a substrate having at least one guide part;  
30 a switch unit provided on said substrate, said  
switch unit having a driven part that is driven for  
reciprocating motion;

a light-emitting device provided on said substrate  
at a location adjacent to said switch unit; and

35 a pushbutton unit that drives said switch unit, said

pushbutton unit having a pushbutton unit main body and a push-down member with indicator; and

5       said pushbutton unit main body being formed as a one-piece member incorporating an opposed part disposed in opposed relation to said light-emitting device, a coupling part coupled to said driven part of said switch unit to interlock said driven part and said pushbutton unit for reciprocating motion, and at least one guide-engaging part engaged with a corresponding one of said at  
10       least one guide part of said substrate to cooperate with said corresponding guide part to perform a guiding function of guiding the reciprocating motion of said pushbutton unit,

15       said push-down member with indicator being disposed on a side of said pushbutton unit main body remote from said substrate and in association with said opposed part of said pushbutton unit main body, said push-down member with indicator having a depressing part for depressing operation, said depressing part allowing light from said  
20       light-emitting device to pass therethrough.

8.    An illuminated switch construction as claimed in claim 7, wherein said push-down member with indicator includes at least one light diffuser sheet.

9.    An illuminated switch construction as claimed  
25       in claim 8, wherein said push-down member with indicator is formed by said light diffuser sheet and said depressing part stacked upon said light diffuser sheet on the side of the pushbutton unit main body remote from said substrate.

30       10.   An illuminated switch construction as claimed in claim 9, wherein said depressing part composed of a solid transparent body.

11.   An illuminated switch construction as claimed  
35       in claim 9, further comprising at least one positioning engaging part provided on said pushbutton unit main body,

for aligning said light diffuser sheet and said depressing part stacked upon said light diffuser sheet.

12. An illuminated switch construction comprising:

a substrate having at least one guide part;

5 a switch unit provided on said substrate, said switch unit having a driven part that is driven for reciprocating motion;

a light-emitting device provided on said substrate at a location adjacent to said switch unit; and

10 a pushbutton unit that drives said switch unit, said pushbutton unit being formed by a combination of a pushbutton unit main body and a push-down member with indicator;

said pushbutton unit main body being formed as a  
15 one-piece member incorporating an opposed part disposed in opposed relation to said light-emitting device, a coupling part coupled to said driven part of said switch unit to interlock said driven part and said pushbutton unit for reciprocating motion, at least one guide-engaging part engaged with a corresponding one of said at  
20 least one guide part of said substrate to cooperate with said corresponding guide part to perform a guiding function of guiding the reciprocating motion of said pushbutton unit, and a push-down member-mounting part on  
25 which one of a plurality of types of push-down member with indicator can be selectively mounted on a side of said pushbutton unit main body remote from said substrate,  
said push-down member with indicator being disposed on the side of said pushbutton unit main body remote from  
30 said substrate and in association with said opposed part of said pushbutton unit main body, said push-down member with indicator having a depressing part for depressing operation, said depressing part allowing light from said light-emitting device to pass therethrough,

35 wherein a desired one of the plurality of types of

push-down member with indicator is mounted on said push-down member-mounting part of said pushbutton unit main body, thereby forming one of different types of illuminated switch assemblies.

5           13. An illuminated switch construction as claimed in claim 12, wherein the push-down member with indicator further comprises at least one of a plurality of types of light diffuser sheets, whereby a plurality of types of the push-down member with indicator can be obtained by  
10 selectively combining at least one of the plurality of types of light diffuser sheets with said depressing part; and

              wherein the selected at least one light diffuser sheet and said depressing part are mounted on said push-  
15 down member-mounting part of said pushbutton unit main body in a manner such that the selected at least one light diffuser sheet is stacked upon said depressing part, whereby a desired type of illuminated switch assembly can be obtained.

20           14. An illuminated switch construction as claimed in claim 12, wherein said push-down member with indicator further comprises at least one light diffuser sheet, whereby a plurality of types of the push-down member with indicator can be obtained by selectively combining one of  
25 a plurality of types of depressing parts with said at least one light diffuser sheet; and

              wherein said at least one light diffuser sheet and the selected depressing part are mounted on said push-down member-mounting part of said pushbutton unit main  
30 body in a manner such that the at least one light diffuser sheet is stacked upon the selected depressing part, whereby a desired type of illuminated switch assembly can be obtained.

              15. An illuminated switch construction as claimed  
35 in claim 12, wherein the push-down member with indicator

further comprises at least one of a plurality of types of  
light diffuser sheets, whereby a plurality of types of  
the push-down member with indicator can be obtained by  
selectively combining one of a plurality of types of  
5 depressing parts and at least one of the plurality of  
types of light diffuser sheets; and

wherein said at least one light diffuser sheet and  
the selected depressing part are mounted on said push-  
down member-mounting part of said pushbutton unit main  
10 body in a manner such that the selected at least one  
light diffuser sheet is stacked upon the selected  
depressing part, whereby a desired type of illuminated  
switch assembly can be obtained.

16. An illuminated switch construction as claimed  
15 in claim 12, wherein said pushbutton unit main body  
comprises side walls, and said opposed part comprises a  
cavity surrounded by said side walls.

17. An illuminated switch construction as claimed  
in claim 16, wherein said cavity expands toward said  
20 push-down member with indicator.

18. An illuminated switch construction as claimed  
in claim 16, wherein said depressing part and said cavity  
are disposed such that when during reciprocating motion  
of said pushbutton unit responsive to depression of said  
25 depressing part, at least a portion of said light-  
emitting device is inserted into said cavity, and as said  
depressing part is depressed deeper, said light-emitting  
device is inserted into said cavity to a greater degree.

19. An illuminated switch construction comprising: /  
30 a substrate having a plurality of electric  
components arranged thereon;

at least one guide part fixed on said substrate;  
a switch unit provided on said substrate, said  
switch unit having a driven part that is driven for  
35 reciprocating motion;

a light-emitting device provided on said substrate at a location adjacent to said switch unit; and

a pushbutton unit that drives said switch unit, said pushbutton unit having a light transmissive part allowing  
5 light from said light-emitting device to pass therethrough, a depressing part for depressing operation, a coupling part coupled to said driven part of said switch unit to interlock said driven part and said pushbutton unit for reciprocating motion, at least one  
10 guide-engaging part engaged with a corresponding one of said at least one guide part of said substrate to cooperate with said corresponding guide part to perform a guiding function of guiding the reciprocating motion of said pushbutton unit,  
15 wherein reciprocating motion of said driven part is guided by the guiding function performed by said guide part and said guide-engaging part.

20. A switch construction comprising:

a substrate having at least one guide part;  
20 a switch unit provided on said substrate, said switch unit having a driven part that is driven for reciprocating motion; and  
a pushbutton unit that drives said switch unit, said pushbutton unit having a depressing part for depressing  
25 operation, a coupling part coupled to said driven part of said switch unit to interlock said driven part and said pushbutton unit for reciprocating motion, and at least one guide-engaging part engaged with a corresponding one of said at least one guide part of said substrate to  
30 cooperate with said corresponding guide part to perform a guiding function of guiding the reciprocating motion of said pushbutton unit;

said substrate comprising a general-purpose substrate used as a base member for a plurality of  
35 electric component parts other than said switch unit,



said general-purpose substrate being capable of having said electric component parts and said pushbutton unit arranged thereon;

5 wherein reciprocating motion of said driven part is guided by the guiding function performed by said guide part and said guide-engaging part.

21. An illuminated switch construction comprising:

a substrate having at least one guide pin fixed thereon;

10 a switch unit provided on said substrate, said switch unit having a driven part driven for reciprocating motion;

a light-emitting device provided on said substrate at a location adjacent to said switch unit; and

15 a pushbutton unit that drives said switch unit, said pushbutton unit having an opposed part disposed in opposed relation to said light-emitting device, a depressing part disposed in association with said opposed part, for depressing operation, said depressing part  
20 allowing light from said light-emitting device to pass therethrough, a coupling part coupled to said driven part of said switch unit to interlock said driven part and said pushbutton unit for reciprocating motion, and at least one guide hole having a corresponding one of said  
25 at least one guide pin fitted therethrough, for cooperating with said corresponding guide hole to perform a guiding function of guiding the reciprocating motion of said pushbutton unit.